This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) An inline optical amplifier station for an optical transport system ~~transporting at least one bidirectional optical signal~~, the inline optical amplifier station comprising:

a [[A]] first optical coupler/decoupler ~~for separating~~ configured to separate from a first bidirectional signal[[,]] a first signal ~~bound~~ propagating in a first direction, and ~~for combining~~ configured to combine a second signal ~~bound~~ propagating in a second direction into the first bidirectional signal;

a [[A]] second optical coupler/decoupler ~~for separating~~ configured to separate from a second bidirectional signal[[,]] a third signal ~~bound~~ propagating in the second direction, and ~~for combining~~ configured to combine a fourth signal ~~bound~~ propagating in the first direction into the second bidirectional signal;

a [[A]] first optical attenuator ~~connected to the first signal and to an optical coupler~~ configured to receive the first signal from the first optical coupler/decoupler;

a [[A]] second optical attenuator ~~connected to the third signal and to the optical coupler~~ configured to receive the third signal from the second optical coupler/decoupler~~, the optical coupler for combining the first signal with the third signal into a combined signal~~;

a first optical coupler configured to combine the first and third signals from the first and second optical attenuators, respectively, into a combined signal;

a first optical amplifier configured to co-directionally amplify the combined signal; and

a first optical decoupler configured to separate the combined co-directionally amplified signal into the second and fourth signals.

~~The optical coupler operatively connected to an optical amplifier, the optical amplifier for converting the combined signal into a combined amplified signal; and~~

~~The optical amplifier operatively connected to an optical decoupler for decoupling the combined amplified signal into the fourth signal and the second signal.~~

2. (Currently amended) The inline optical amplifier station of claim 1 wherein the first optical amplifier comprises a multistage amplifier.

3. (Currently amended) The inline optical amplifier station of claim 1 wherein the first optical amplifier ~~further~~ comprises a first stage and a second stage, wherein the first stage is configured to produce ~~producing an~~ a first intermediate combined co-directionally amplified signal ~~connected to a~~ and the second stage is configured to produce ~~producing~~ the combined co-directionally amplified signal.

4. (Currently amended) The inline optical amplifier station of claim 3 further comprising ~~wherein~~ a third ~~variable~~ optical attenuator ~~is operatively~~ connected between the first stage and the second stage.

5. (Currently amended) The inline optical amplifier station of claim 3 further comprising ~~wherein~~ a dispersion compensator ~~is operatively~~ connected between the first stage and the second stage.

6. (Currently amended) The inline optical amplifier station of claim ~~3~~ 4 wherein ~~a dispersion compensator is operatively connected between the first stage and the second stage~~ the first, second and third optical attenuators each comprise a variable optical attenuator.

7. (Previously presented) The inline optical amplifier station of claim 1 wherein the fourth signal and the second signal comprise different wavelengths in two separate bands.

8. (Previously presented) The inline optical amplifier station of claim 1 wherein the fourth signal and the second signal are interleaved on separate channels.

9. (Currently amended) The inline optical amplifier station of claim 1 further comprising a third coupler/decoupler connected to the first coupler/decoupler, wherein third coupler/decoupler is configured to combine a third bidirectional signal ~~is coupled~~ with the first bidirectional signal into a ~~third optical coupler to produce a~~ fourth bidirectional signal.

10. (Previously presented) The inline optical amplifier station of claim 9 wherein the third bidirectional signal includes an optical service channel.

11. (Currently amended) The inline optical amplifier station of claim ~~9~~ 1 further comprising a third coupler/decoupler connected to the second coupler/decoupler, wherein the third coupler/decoupler is configured to combine a ~~fifth~~ third bidirectional signal ~~is combined~~ with the second bidirectional signal into a fourth ~~optical coupler to produce a sixth~~ bidirectional signal.

12. (Previously presented) The inline optical amplifier station of claim 10 wherein the optical service channel is in a separate wavelength range from the fourth signal and the second signal.

13. (Previously presented) The inline optical amplifier of claim 9 wherein the third bi-directional signal includes a control channel.

14. (Currently amended) The inline optical amplifier station of claim 13 wherein the control channel is in a separate wavelength range from ~~both~~ the fourth signal and the second signal.

15. (Currently amended) The inline optical amplifier station of claim 9 further comprising a ~~westbound transmitter providing a westbound transmitted signal~~ terminal connected to the third coupler/decoupler, wherein the terminal is configured to transmit and receive the fourth bidirectional signal.

16. (Currently amended) The inline optical amplifier station of claim ~~13~~ 11 further comprising ~~an eastbound receiver for receiving an eastbound received signal~~ a terminal connected to the third coupler/decoupler, wherein the terminal is configured to transmit and receive the fourth bidirectional signal.

17-22. (Canceled)

23. (Currently amended) The inline optical amplifier station of claim 4 further comprising:

a second ~~An~~ optical decoupler ~~operatively~~ connected to the third ~~variable~~ optical attenuator, wherein the second decoupler is configured to separate ~~decoupling~~ the first intermediate combined co-directionally amplified signal into a ~~westbound~~ first uncompensated signal and ~~an eastbound~~ a second uncompensated signal;

a [[A]] first dispersion compensation module ~~operatively~~ connected to the optical decoupler, wherein the first dispersion compensation module is configured to compensate ~~for compensating~~ the ~~eastbound~~ first uncompensated signal into ~~an eastbound~~ a first compensated signal;

a [[A]] second dispersion compensation module ~~operatively~~ connected to the optical decoupler, wherein the second dispersion compensation module is configured to compensate ~~for compensating~~ the ~~westbound~~ second uncompensated signal into a ~~westbound~~ second compensated signal; and

a second ~~An~~ optical coupler ~~operatively~~ connected to the first ~~dispersion compensated module~~ and ~~the~~ second dispersion compensation modules, wherein the second optical coupler is configured to combine ~~for coupling the eastbound compensation signal and the westbound compensated signal~~ the first and second compensated signals into ~~the~~ a second intermediate combined co-directionally amplified signal.

24. (Currently amended) The inline optical amplifier station of claim 1 further comprising an optical element connected between the first optical amplifier and the first optical decoupler, wherein the ~~combined amplified signal is further modified by an~~ optical element is configured to modify the combined co-directionally amplified signal before ~~being~~ the combined co-directionally amplified signal is decoupled by the first optical decoupler.

25. (Currently amended) The inline optical amplifier station of claim 24 wherein the optical element ~~is~~ comprises an optical add/drop multiplexer.

26. (Currently amended) The inline optical amplifier station of claim 24 wherein the optical element ~~is~~ comprises a dynamic gain equalizer.

27. (Currently amended) The inline optical amplifier station of claim 24 wherein the optical element ~~is~~ comprises a second optical amplifier.

28. (Currently amended) The inline optical amplifier station of claim 24 wherein the optical element ~~is~~ comprises a dynamic band equalizer and a second optical amplifier.

29. (Currently amended) The inline optical amplifier station of claim 24 wherein the optical element ~~is~~ comprises an optical add/drop multiplexer and a second optical amplifier.

30. (Previously presented) The inline optical amplifier station of claim 1 wherein[[:]] the first optical attenuator comprises a first variable optical attenuator,[[;]]

wherein the second optical attenuator comprises a second variable optical attenuator,[[;]] and

wherein the first variable optical attenuator and the second variable optical attenuator are configured to be adjusted to equalize ~~the~~ a power of the first signal with respect to the third signal.

31. (Currently amended) A method for amplifying an eastbound signal and a westbound signal in an ~~single fiber~~ optical transport system, the method comprising ~~the steps of~~:

isolating ~~a first~~ the eastbound signal from a first bidirectional signal;

isolating ~~a first~~ the westbound signal from a second bidirectional signal;

power matching the ~~first~~ eastbound signal and the ~~first~~ westbound signal;

combining the power matched eastbound and westbound signals; and

co-directionally amplifying the ~~power matched~~ combined eastbound and westbound signals.[[;]]

~~isolating a second the eastbound signal; and~~

~~isolating a second the westbound signal.~~

32. (Currently amended) The method of claim 31 ~~wherein the step of amplifying~~ further ~~comprises~~ comprising compensating for dispersion in at least one of the co-directionally amplified eastbound and westbound signals.

33. (Currently amended) The method of claim ~~3~~ 31 ~~wherein the step of amplifying~~ further ~~comprises the step of~~ comprising attenuating the ~~power matched~~ co-directionally amplified eastbound and westbound signals.

34. (Currently amended) The method of claim 31 ~~32 wherein the step of compensating for dispersion~~ further ~~comprise the steps of~~ comprising:

isolating ~~an eastbound power matched~~ the co-directionally amplified eastbound signal;

isolating ~~a westbound power matched~~ the co-directionally amplified westbound signal;

compensating for ~~the~~ dispersion in the ~~eastbound power matched~~ co-directionally amplified eastbound signal;

compensating for ~~the~~ dispersion in the ~~westbound power matched~~ co-directionally amplified westbound signal; and

recombining the ~~eastbound power matched~~ co-directionally amplified eastbound signal and the ~~westbound power matched~~ co-directionally amplified westbound signal.

35-48. (Canceled)

49. (Currently amended) The ~~An~~ inline optical amplifier station ~~in accordance with~~ of claim 1[[,]] wherein[[:]] the first signal comprises an unamplified eastbound signal,[[;]]

wherein the second signal comprises an amplified westbound signal,[[;]]

wherein the third signal comprises an unamplified westbound signal,[[;]] and

wherein the fourth signal comprises an amplified eastbound signal.

50. (Currently amended) The ~~An~~ inline optical amplifier station ~~in accordance with~~ of claim 1[[,]] wherein[[:]] the first and second optical attenuators each comprise[[s]] a variable optical attenuator~~; and~~

~~the second optical attenuator comprises a variable optical attenuator~~.

51. (Canceled)

52. (New) The method of claim 31 further comprising isolating the co-directionally amplified eastbound and westbound signals.

53. (New) The method of claim 52 further comprising combining the co-directionally amplified eastbound signal with the second bidirectional signal and combining the co-directionally amplified westbound signal with the first bidirectional signal.

54. (New) The method of claim 34 wherein dispersion in the co-directionally amplified eastbound signal is compensated independent of the dispersion in the co-directionally amplified westbound signal.

55. (New) An inline optical amplifier station for an optical transport system, the inline optical amplifier station comprising:

means for isolating an eastbound signal from a first bidirectional signal;

means for isolating an westbound signal from a second bidirectional signal;

means for power matching the eastbound signal and the westbound signal;

means for combining the power matched eastbound and westbound signals; and

means for co-directionally amplifying the combined eastbound and westbound signals.

56. (New) The inline optical amplifier station of claim 55 further comprising means for compensating for dispersion in at least one of the co-directionally amplified eastbound and westbound signals.

57. (New) The inline optical amplifier station of claim 55 further comprising means for attenuating the co-directionally amplified eastbound and westbound signals.

58. (New) The inline optical amplifier station of claim 55 further comprising:

means for isolating the co-directionally amplified eastbound signal;

means for isolating the co-directionally amplified westbound signal;

means for compensating for dispersion in the co-directionally amplified eastbound signal;

means for compensating for dispersion in the co-directionally amplified westbound signal; and

means for recombining the co-directionally amplified eastbound signal and the co-directionally amplified westbound signal.

59. (New) The inline optical amplifier station of claim 55 further comprising means for isolating the co-directionally amplified eastbound signal and means for isolating the co-directionally amplified westbound signal.

60. (New) The inline optical amplifier station of claim 59 further comprising means for combining the co-directionally amplified eastbound signal with the second bidirectional signal and means for combining the co-directionally amplified westbound signal with the first bidirectional signal.

61. (New) The inline optical amplifier station of claim 55 wherein dispersion in the co-directionally amplified eastbound signal is compensated independent of the dispersion in the co-directionally amplified westbound signal.